

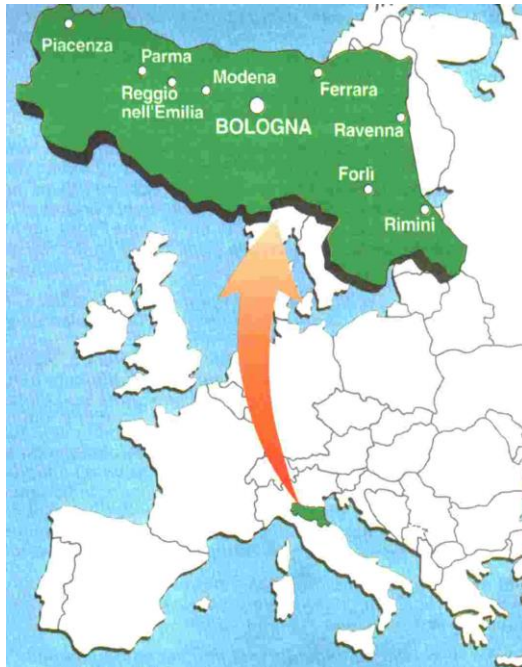
The green economy in Emilia-Romagna Region

The contribution of the agriculture to the climate change mitigation by RDP operations.

***IEEP ENRD Meeting - BRUXELLES, July 1st
2016***



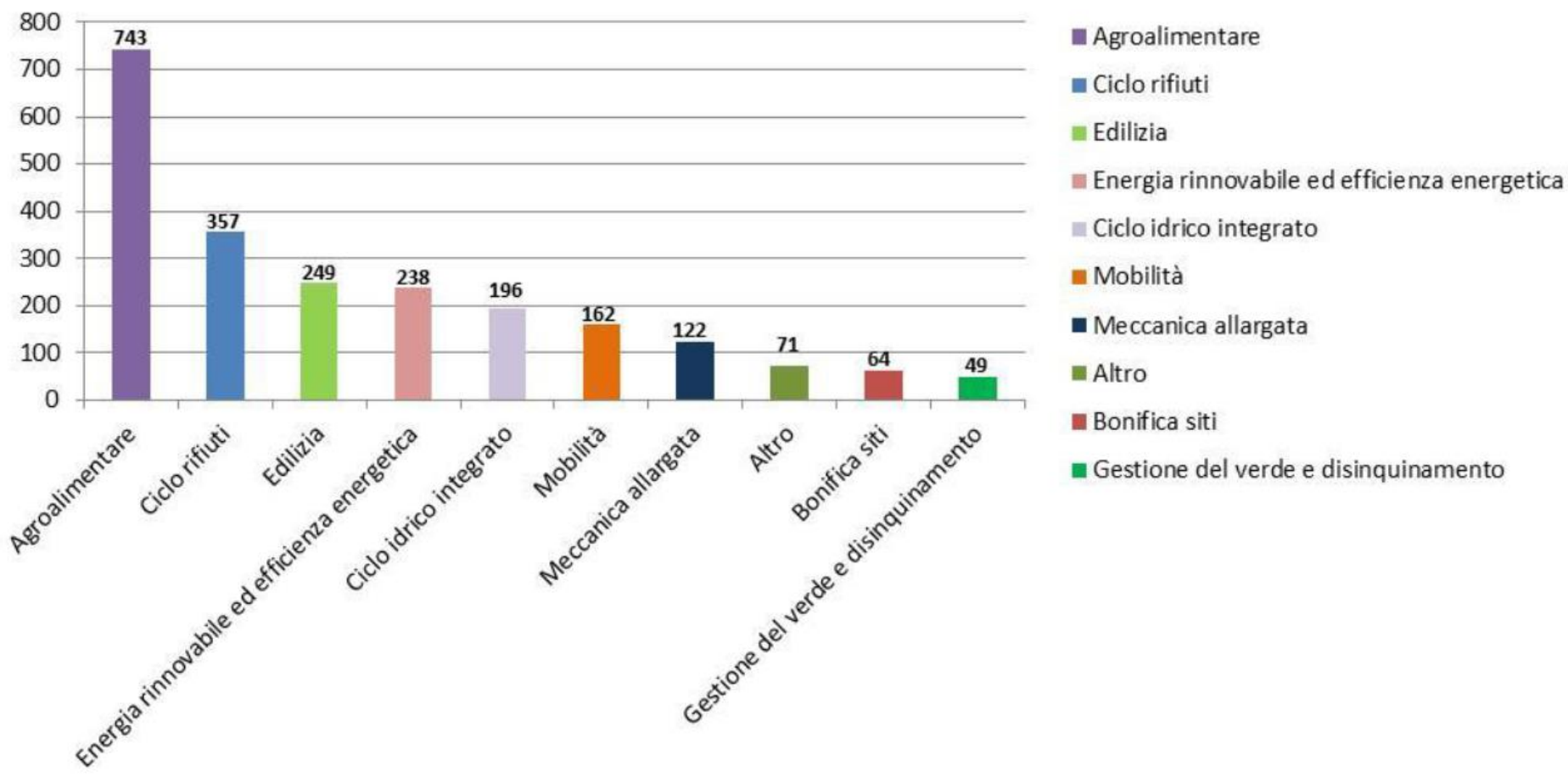
*Green Economy:
what does the Emilia-Romagna Region*



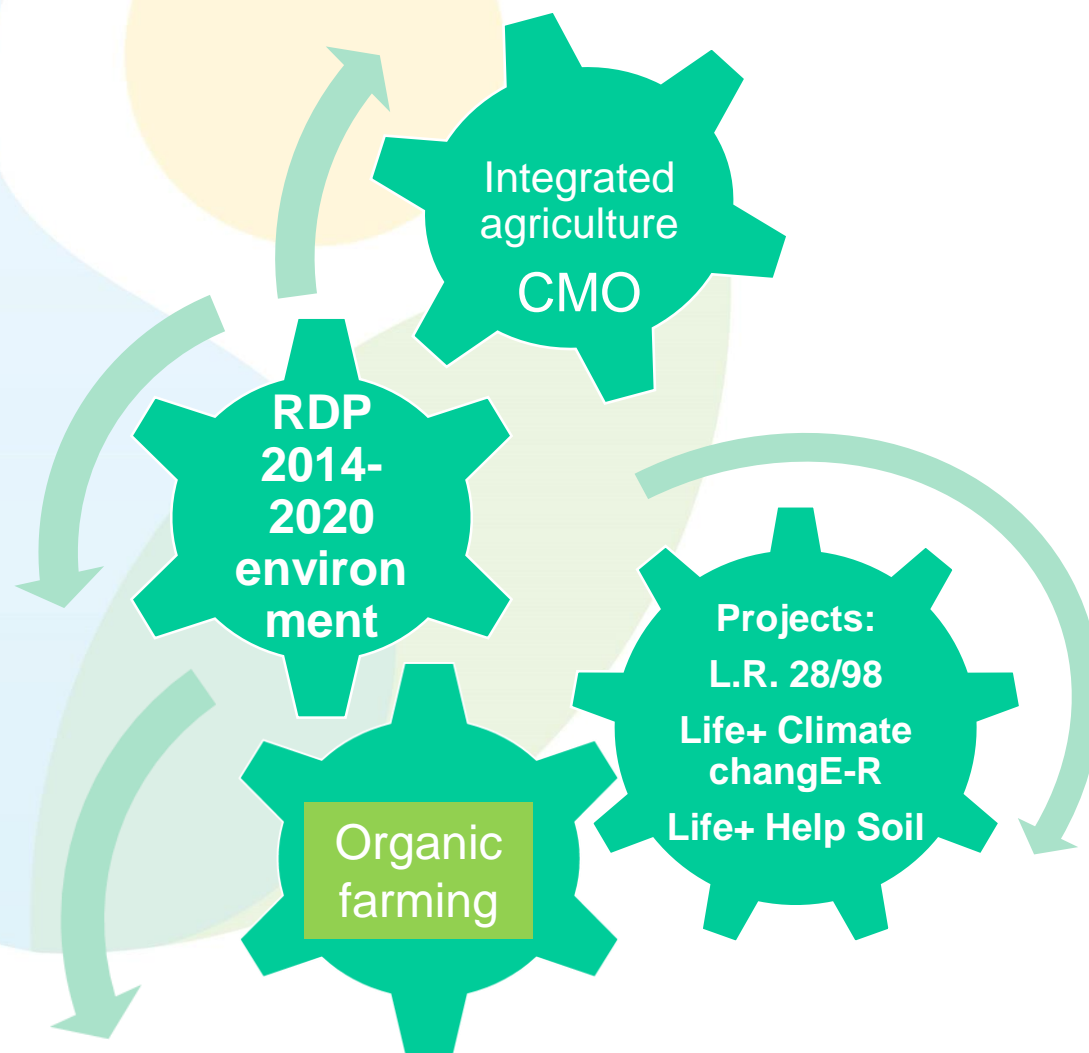
- **Traditional sectors:** food, site remediation, waste cycle and the water, management of green areas.
- **Emerging sectors:** renewable sources and energy.
- **Areas with a trend of a conversion to cleaner production:** sustainable mobility, construction and mechanics enlarged.
- **Other realities related to green supply chain system:** agriculture (organic), forestry, as well as energy certification.
- **Support services:** education and research sector.

THE OBSERVATORY OF GREEN ECONOMY EMILIA ROMAGNA, activated within the agreement between **Ervet** and **ER Region**, is working for the numerical and quantitative characterization of the regional green economy. The Observatory explores the potential of the green industry by comparing the trend to the average of the regional economy

In 2015, the Emilia-Romagna Region has launched the **GENERAL STATES OF THE GREEN ECONOMY**, the path of confrontation and coordination of interventions in the field of green economy 'greening the industry'.



AGRICULTURE regional strategy for a sustainable competitiveness



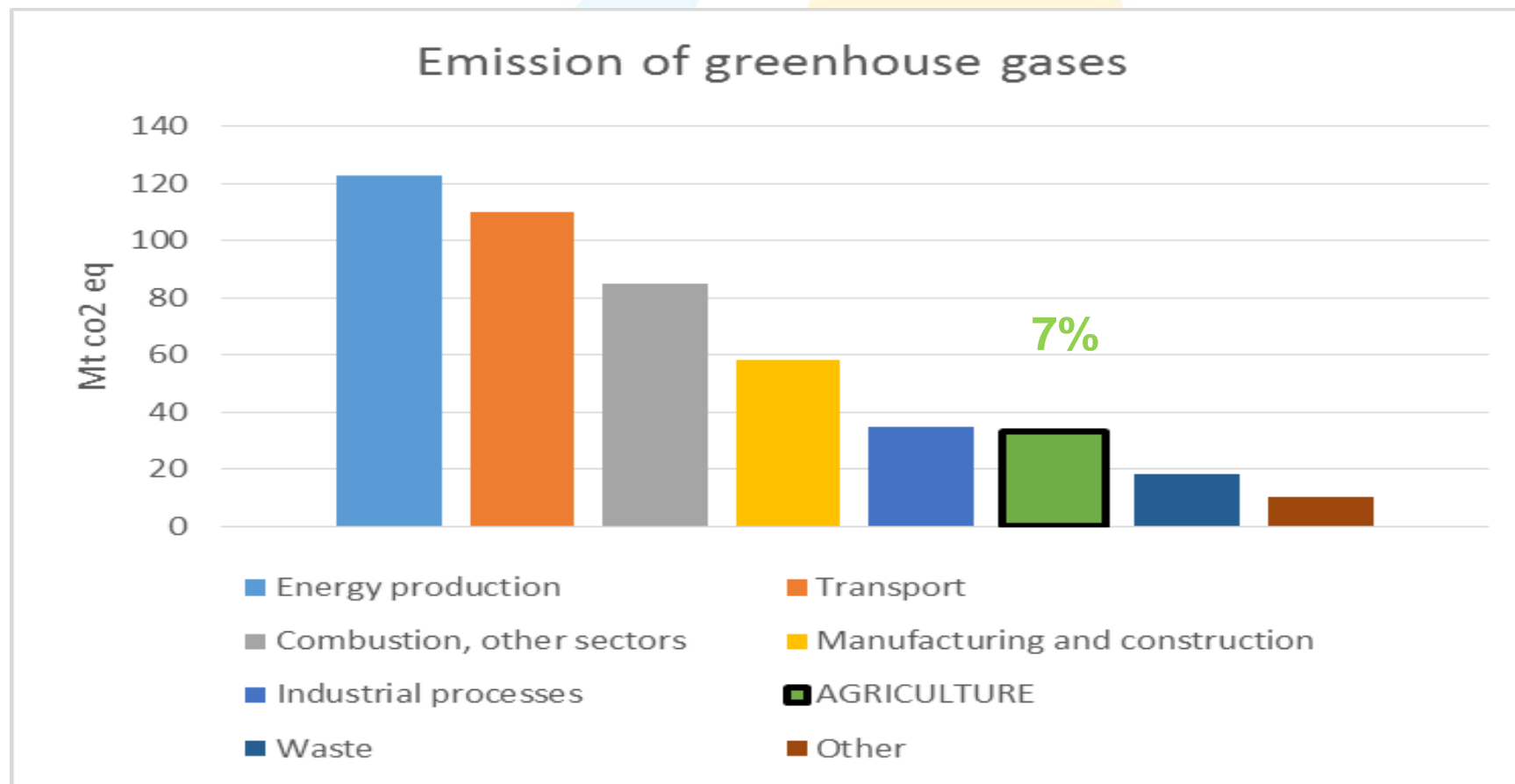
A successful case-history: the Life project

LIFE+_Climate changE-R

“Reduction of greenhouse gases from agricultural systems of Emilia-Romagna” (LIFE12/ENV/IT/404)

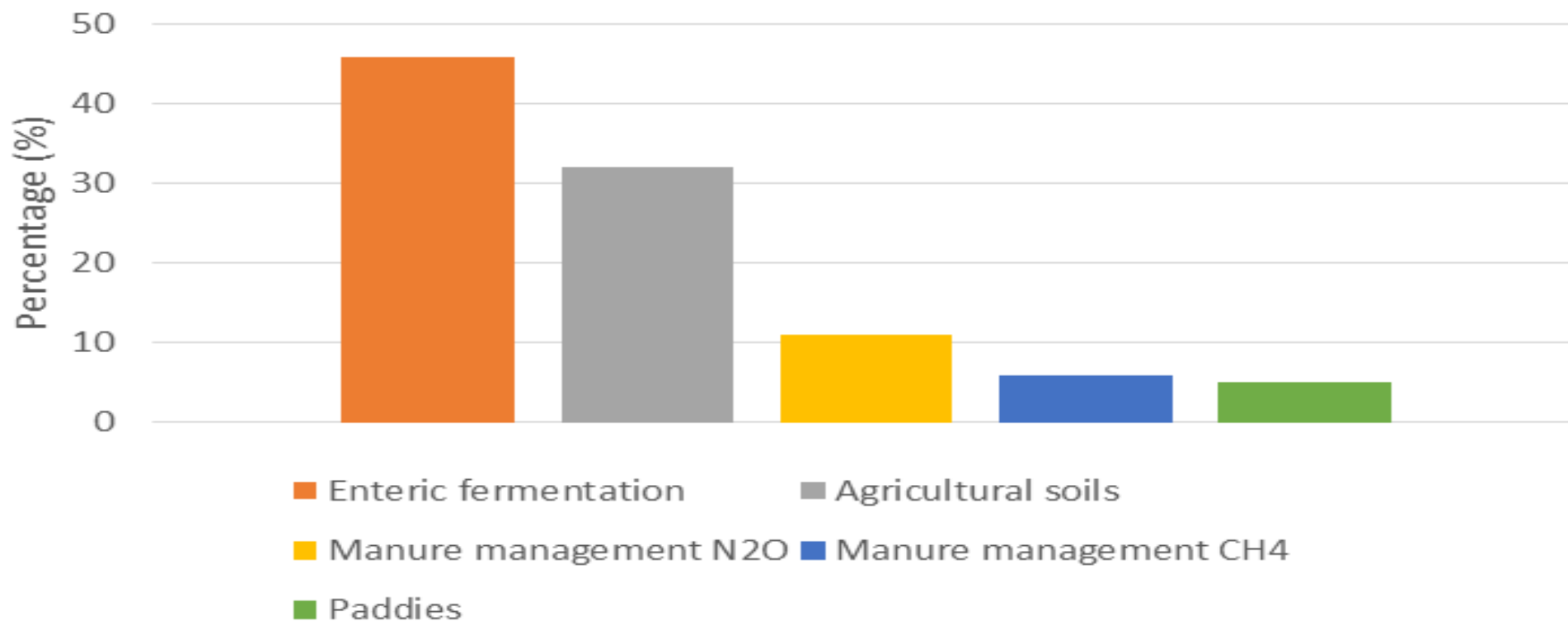
***The contribution of the agriculture of Emilia-Romagna
to the climate change mitigation***

Italy – 7% GHG emissions from agriculture



Sources of Italian agricultural emissions

Emission of greenhouse gases in **agricultural**



WHY A LIFE+ PROJECT ?

The background

- **The big engagement since 30 years by Regione Emilia-Romagna in farming for sustainable agriculture and a better public health**
- **Integrated farming (low input management)**
- **Organic production**
- **Animal welfare**
- **Dir 91/676/EEC (Nitrates Directive)**
strict application
- **a public commercial label**



.. In 2012

- **RDP 2007-2013**. Reduction of crop management input used in organic and integrated farming vs. conventional agriculture. Estimate of **performance in GHG emission was calculated** (carbon footprint).
- The regional **private sector experimented practices** that can reduce GHG emission also in the farms.
- The Life+ programme – **Environmental Policy and Governance** offered a good opportunity to define and demonstrate good agricultural practices that can have positive effect in GHG mitigation.
- Within the project, **the good mitigation practices can be assessed by the stakeholders**
- As project result, the good Practices **can be designed into specific operations in the environment and clima priority of the regional RDP 2014-2020** in order to support their adoption by farmers in Emilia-Romagna Region.
- Moreover, a **public database** containing real farm impact data coming from partners' experience and collected during the project can be realized: data

What is Climate changE-R?

Climate changE-R is a demonstrative project granted by the LIFE+ programme - *Environmental Policy and Governance*. It's oriented to the application and dissemination of methods useful to obtain a reduction of the GHG emission from the agriculture systems of Emilia-Romagna

- Total cost 1.853.900 €
- EU support 891.950 € (48,11%)
- Start **1st July 2013**
- Conclusion **31st December 2016**

The Project Partnership

1 Coordinating Beneficiary
(Emilia-Romagna Region)

10 Associated beneficiaries

(APO Conerpo, ARPA E-R, Barilla, Coop italia, CRPA, CRPV, CSO, Granarolo, Parmareggio, UNIPEG), Parmigiano - Reggiano Consortium (as Co-financer)

This Partnership includes the Public authority for rural development programming, Research and Innovation Institutes and very important Holdings in agrofood. **Partnership covers directly or indirectly for about 30% of the regional farms and more than 8 millions of the consumers.**

The Project targets

- **Environment and economy can stay together through agreements in the food chain, including Best Practices for the mitigation of GHG impact**
- **Orientation of RDP 2014-2020 to support farmers and holdings commitments into application of the Best Practices for mitigation**

The Climate ChangE-R items

Objectives:

Setting up Best Practices to reduce GHG emissions (CH_4 , N_2O , CO_2)

Carbon Foot Print for 8 productive chains of Emilia Romagna:

5 vegetables (peach, pear, durum wheat, tomato, green beans)



... **3 animal products:**

Milk, Meat and Milk for Parmigiano-Reggiano cheese

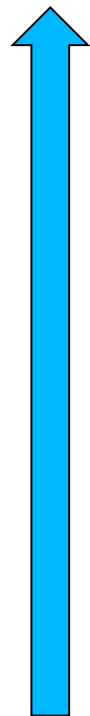


Project actions

- ❑ Study of the application of the LCA methodology in the agricultural system of Emilia-Romagna from the cradle to the farm gate. Realization of a public Database.
- ❑ Identification of the Best Practices.
- ❑ Monitoring of the impact of the project actions including evaluation of the socio-economic aspects
- ❑ Dissemination and adoption of Best practices by a strong information and demonstration action toward the operators, citizens and consumers
- ❑ Networking and dissemination after the end of the project to support climate change mitigation

Environmental impact level - LAA

Effects on GHG reduction



LAA3: according to 'Best practices'

LAA2: according to 'Integrated farming'
(UE) 1305/13 Reg. (CE) 1698/05)

LAA1: according to 'Cross compliance'
(Reg. (EC) 1782/2003 and Reg. (EC) No 796/2004)

The Best Practices for crops and fruit production

- **Seeding/rotation:** crop rotation of min 3 crops in 5 years, reseeding of same crop not permitted
- **Fertilisation:** based on crop uptake and soil content availability, specific rules for organic fertilisers **enhancing the value of manure** (soil analysis)
- **Soil management:** precision farming e minimum tillage
- **Plant protection and weed control:** treatment applied only if necessary and with correct timing (forecasting models, bulletins, based on lower impact)
- **Irrigation:** distribution based on crop uptake/meteo data and soil texture

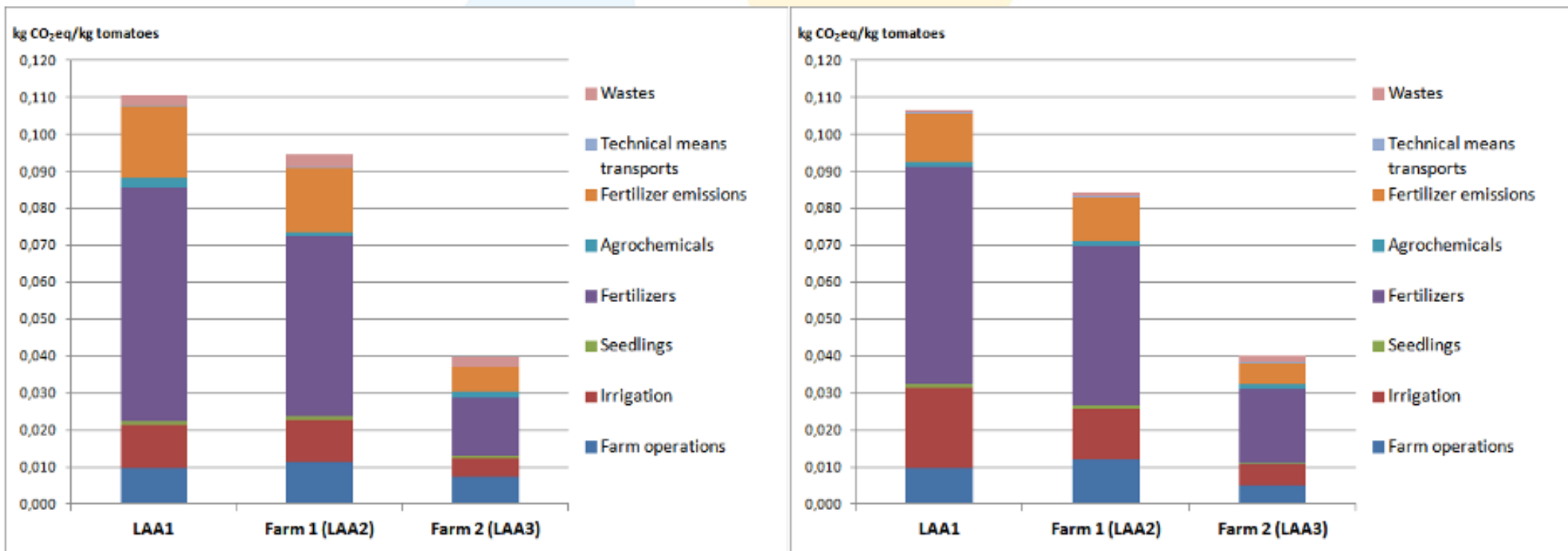
The Best Practices for livestock

- Feed and fodder production with application of Best Practices
- Feed and fodder analysis
- Advanced management techniques to calculate the livestock diet (decreasing Nitrogen emissions)
- Advanced management techniques for livestock manure management

Greenhouse Gases: comparison of the cases studied in 2014 and 2015 in terms of CO₂ eq per kg of tomatoes

2014

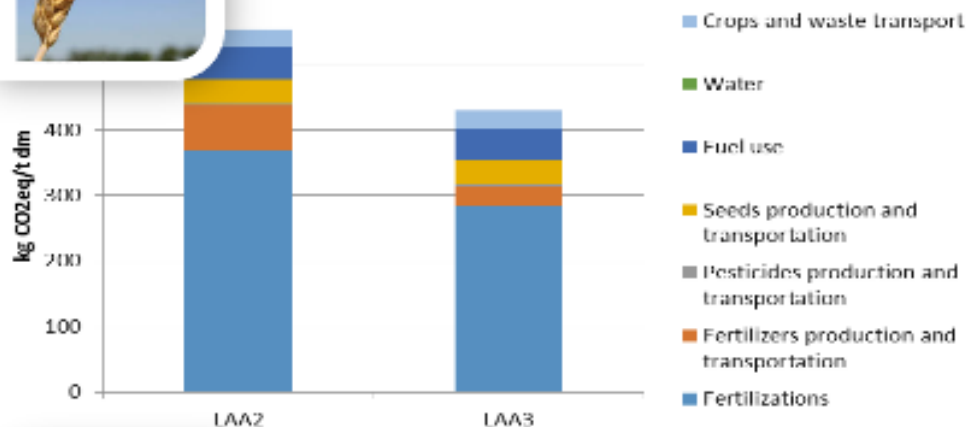
2015



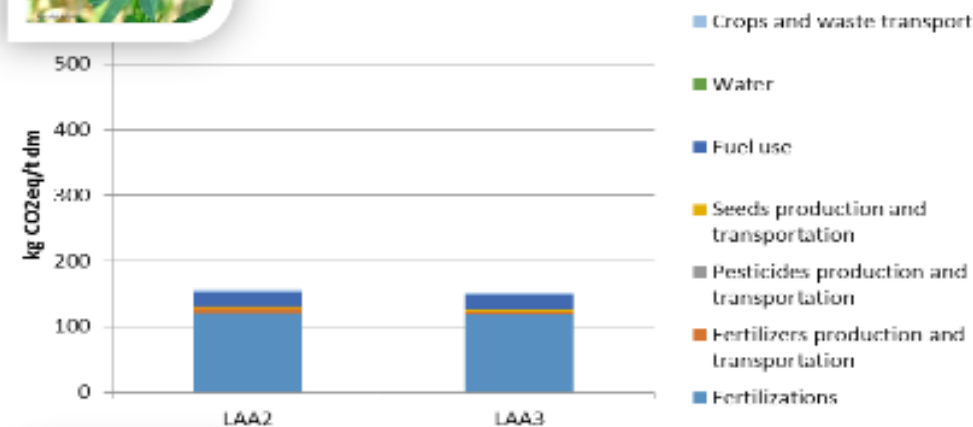
2014: fertilizers + fertilizer emissions: 44-63% of whole emissions

2015: fertilizers + fertilizer emissions: 50-55% of whole emissions

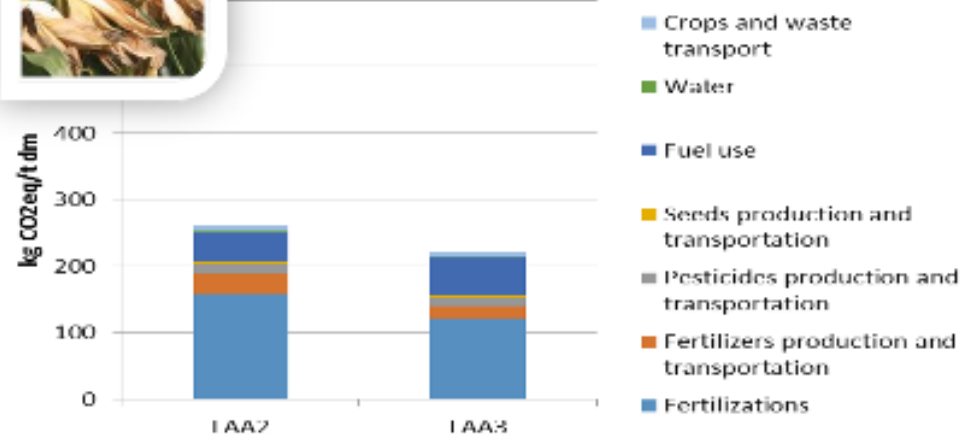
Wheat



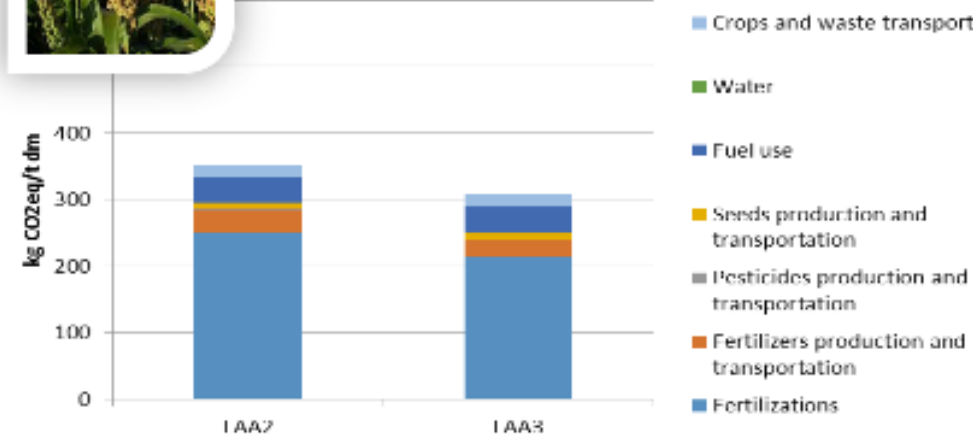
Alfalfa



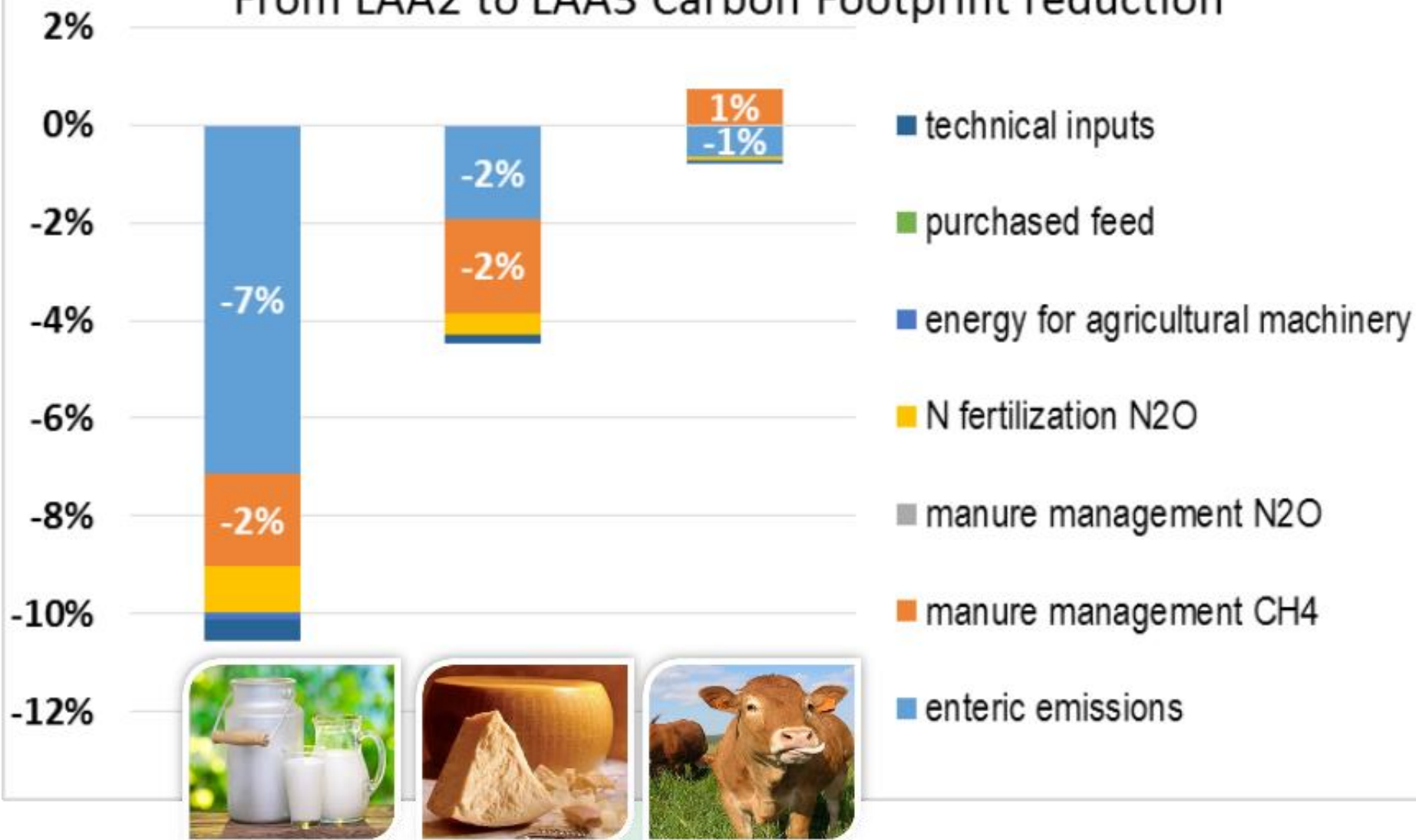
Whole-ear corn for silage



Sorghum for silage



From LAA2 to LAA3 Carbon Footprint reduction



Demonstration Activities

16 public demonstration days involving more than 320 technicians and farmers



Governance follow up

- ❑ Setting up framework agreements between farmers and **enterprises including** Good GHG mitigation Practices (e.g durum wheat and tomato contracts)
- ❑ **RDP 2014-2020** of Emilia-Romagna has been oriented to support farmers in adopting of Best Practices
- ❑ **RDP**, as the most important policy instrument for agriculture, in Emilia-Romagna gives available **1,19 Billions of Euro** cofinanced by European Union, national and regional funds.
- ❑ **More than 40% of resources** for agro-clima-environmental measures, with specific target to sustainable production and investments for innovation

Agro-climatic-environmental measures

Support per Hectar to farmers for a 5 years commitment: the adoption of the **Climate ChangE-R Best Practices**, as:

- ❑ Improving the quality of water and soil, going further the usual Integrated Production commitments (Measure 10.1.01),
- ❑ Reduction of GHG emissions and ammonium through the livestock manure management (10.1.02), improving the organic substances (10.1.03), reduction of nitrogen emissions (4.1)
- ❑ Promoting the carbon sequestration through permanent meadows (10.1.07)
- ❑ Others operations under the Cooperation, Innovation and Training measures

Today more than 230.000 Ha are involved at least in one of the mentioned measures. That means more than the 20% of the UAArea of our Region.

RDP 2014-2020: preliminary results (2016)

Agro-clima-environmental measures

| operation | support | n. applicants |
|--|---------------------------|---|
| 10.1.01 – integrated farming management | 60-350 €/ha/year | 2500 applications 25 M€ - avail. 8.3 M€ |
| 10.1.02 – livestock manure management | 100 €/ha/year | Call in 2017 |
| 10.1.03 – improving the organic substances | 100 €/ha/year | 3 M€ - avail. 1.0 M€ |
| 10.1.07 – permanent meadows | 150 €/ha/year | 1.6 M€ - avail. 1.6 M€ |
| 11.1.01 – organic farming | 90-740 €/ha/year | 50000 Ha application 11 M€ - avail. 7.2 M€ |
| 16.05.02 – cooperation for GHG reduction in livestock | | Call in 2016 |
| 4.1.04 – investments for GHG, reduction of nitrogen emissions | 40-60 % 20000-180000 € | Call in 2016 |
| Mis. 1 and 2 – innovation, education and farmer extension services | | Call open |

Go forward

The positive impact of good practices for the mitigation of climate change on an intensive agricultural system, but already careful to environmental protection, such as Emilia Romagna, could be a very useful model for other countries thus helping to create a positive environmental repercussion throughout the EU agriculture.





Thank you for your attention

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